

Supplement Table 3. Micro-CT analysis of trabecular regions of femora.

	AIN76A	AIN76A+AQ	HFWD	HFWD+AQ
5 Months				
Bone mineral content (mg)	0.75 ± 0.06	0.89 ± 0.20	0.75 ± 0.24	0.81 ± 0.07
Bone mineral density (mg/cc)	210 ± 16 ^c	238 ± 45	183 ± 31	222 ± 17 ^a
Tissue mineral density (mg/cc)	571 ± 18 ^c	579 ± 19	523 ± 12	565 ± 9 ^a
Bone volume fraction (mm ³ /mm ³)	0.12 ± 0.02	0.16 ± 0.07	0.11 ± 0.07	0.13 ± 0.02
Surface to volume ratio (mm ² /mm ³)	53.5 ± 3.5	49.8 ± 4.0 ^d	56.8 ± 5.7	49.7 ± 2.4 ^{a, b}
Trabecular thickness (mm)	0.038 ± 0.002	0.040 ± 0.004	0.036 ± 0.004	0.040 ± 0.002 ^{a, b}
Trabecular number (1/mm)	3.13 ± 0.35 ^c	3.90 ± 1.24	2.47 ± 0.46	3.32 ± 0.42 ^a
Trabecular spacing (mm)	0.29 ± 0.04	0.24 ± 0.10	0.35 ± 0.11	0.27 ± 0.04 ^a
12 Months				
Bone mineral content (mg)	0.73 ± 0.11 ^c	0.76 ± 0.09	0.59 ± 0.16	0.73 ± 0.08 ^a
Bone mineral density (mg/cc)	202 ± 26 ^c	209 ± 23	156 ± 39	194 ± 19 ^a
Tissue mineral density (mg/cc)	534 ± 34	573 ± 23	561 ± 64	557 ± 21
Bone volume fraction (mm ³ /mm ³)	0.08 ± 0.03	0.11 ± 0.03	0.06 ± 0.05	0.09 ± 0.02
Surface to volume ratio (mm ² /mm ³)	57.0 ± 4.2	47.6 ± 3.4 ^d	56.5 ± 12.3	50.9 ± 3.6 ^b
Trabecular thickness (mm)	0.035 ± 0.003	0.042 ± 0.003 ^d	0.034 ± 0.003	0.039 ± 0.003 ^{a, b}
Trabecular number (1/mm)	2.37 ± 0.70 ^c	2.60 ± 0.66	1.50 ± 0.45	2.24 ± 0.37 ^a
Trabecular spacing (mm)	0.42 ± 0.12 ^c	0.37 ± 0.14	0.69 ± 0.25	0.42 ± 0.09 ^a
18 Months				
Bone mineral content (mg)	0.65 ± 0.07 ^c	0.74 ± 0.16	0.43 ± 0.07	0.62 ± 0.14 ^a
Bone mineral density (mg/cc)	180 ± 20 ^c	205 ± 45	112 ± 23	136 ± 30 ^a
Tissue mineral density (mg/cc)	531 ± 44	595 ± 48 ^d	557 ± 22	616 ± 39 ^{a, b}
Bone volume fraction (mm ³ /mm ³)	0.07 ± 0.02 ^c	0.11 ± 0.06 ^d	0.03 ± 0.01	0.06 ± 0.03 ^a
Surface to volume ratio (mm ² /mm ³)	60.2 ± 6.3	48.2 ± 6.1 ^d	63.4 ± 6.4	50.6 ± 7.5 ^{a, b}
Trabecular thickness (mm)	0.034 ± 0.004	0.042 ± 0.005 ^d	0.032 ± 0.003	0.040 ± 0.006 ^{a, b}
Trabecular number (1/mm)	2.05 ± 0.56 ^c	2.67 ± 1.30	0.83 ± 0.18	1.34 ± 0.55 ^{a, b}
Trabecular spacing (mm)	0.49 ± 0.13 ^c	0.44 ± 0.30	1.24 ± 0.31	0.81 ± 0.31 ^{a, b}

Each femur was subjected to micro-CT at trabecular ROI—distal metaphysis. With each bone, eight trabecular parameters were assessed. Values are means and standard deviation. Statistical significance was determined by ANOVA followed by paired group comparisons ($p < 0.05$). “a” and “b” are placed on the HFWD+AQ ; group: “a” shows statistically significant difference relative to the HFWD group, “b” shows statistically significant difference relative to AIN76A; “c” is placed on the AIN76A shows significant difference relative to the HFWD and “d” is placed on the AIN76A+AQ shows significant difference relative to AIN76A. Data are based on 10 male mice in each diet group at 5 and 12 months while 15 mice at 18 months.